

Title (en)  
INFRASTRUCTURE-SIDE SURROUNDINGS ACQUISITION IN AUTONOMOUS DRIVING

Title (de)  
INFRASTRUKTURSEITIGE UMFELDERFASSUNG BEIM AUTONOMEN FAHREN

Title (fr)  
Détection de l'environnement côté infrastructure lors de la conduite autonome

Publication  
**EP 3928127 A1 20211229 (DE)**

Application  
**EP 20725093 A 20200421**

Priority  
• DE 102019209154 A 20190625  
• EP 2020061065 W 20200421

Abstract (en)  
[origin: WO2020259892A1] A description is given of a method for generating a surroundings model of an autonomously controlled vehicle F. In the method, sensor data are acquired by a multiplicity of infrastructure-side sensors 22a, 22b in a surrounding region of the vehicle F. Fused sensor data are generated in a stationary manner on the basis of the acquired sensor data. Surroundings model data are also generated in a stationary manner through evaluation of the sensor data on the infrastructure side, wherein objects located in the surrounding region are localized and identified. The surroundings model data are finally transmitted to the vehicle F. A description is also given of a method for autonomously controlling a vehicle F. A description is additionally given of a surroundings model generation apparatus and of a vehicle control apparatus. A description is furthermore given of an autonomously controlled vehicle F and of an automated transport system. A junction 40 in the road network has a high-priority centre region 41a and a lower-priority peripheral region 41b. The junction 40 is monitored using sensor units 22a, 22b. Two vehicles F each approaching the junction are located in the region of the junction, and thus also in the monitoring region 41a, 41b. A motorcycle M moving out of the inner monitoring region 41a is also detected. A person P currently crossing a zebra crossing Z is additionally detected in the inner monitoring region 41a. Monitoring data are transmitted from a communication unit 22c to vehicles F located within the transmission range via radio. Sensor data acquired at the vehicle regarding the surrounding region of the vehicle are preferably also used to generate the surroundings model data. A data basis for the surroundings model of the vehicle is advantageously able to be expanded, such that the reliability, resolution and completeness of the surroundings model are improved.

IPC 8 full level  
**G01S 17/931** (2020.01); **G05D 1/02** (2020.01); **G06K 9/00** (2006.01); **G08G 1/01** (2006.01)

CPC (source: EP)  
**G01S 7/003** (2013.01); **G01S 7/4804** (2013.01); **G01S 7/4808** (2013.01); **G01S 13/42** (2013.01); **G01S 13/91** (2013.01); **G01S 17/86** (2020.01); **G01S 17/931** (2020.01); **G06V 20/52** (2022.01); **G06V 20/54** (2022.01); **G06V 20/56** (2022.01); **G08G 1/0116** (2013.01); **G08G 1/0133** (2013.01); **G08G 1/0141** (2013.01); **G08G 1/096775** (2013.01); **G01S 2013/9316** (2020.01)

Citation (search report)  
See references of WO 2020259892A1

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**DE 102019209154 A1 20201231**; EP 3928127 A1 20211229; WO 2020259892 A1 20201230

DOCDB simple family (application)  
**DE 102019209154 A 20190625**; EP 2020061065 W 20200421; EP 20725093 A 20200421